OIL ANALYSIS REPORT

Sample Rating Trend

WEAR

Area
[66755]
Machine Id
VOLVO VNR660 4612
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 30 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check for faulty combustion and a possible overheat condition. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) DIESEL ENGINE OIL SAE 30. Please confirm.

Wear

Nickel ppm levels are severe. Iron ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated. Exhaust valve wear is indicated.

Contamination

Fuel content negligible. Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

Fluid Condition

A small degree of oil oxidation was indicated. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0909048**	---	---
Sample Date		Client Info		**14 Mar 2024**	---	---
Machine Age	kms	Client Info		**279690**	---	---
Oil Age	kms	Client Info		**174005**	---	---
Oil Changed		Client Info		**Changed**	---	---
Sample Status				**SEVERE**	---	---

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	**NEG**	---	---
Glycol		WC Method		**NEG**	---	---

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		**0**	---	---
Iron	ppm	ASTM D5185(m)	>100	▲ **176**	---	---
Chromium	ppm	ASTM D5185(m)	>20	**3**	---	---
Nickel	ppm	ASTM D5185(m)	>2	▲ **21**	---	---
Titanium	ppm	ASTM D5185(m)		**0**	---	---
Silver	ppm	ASTM D5185(m)	>2	**<1**	---	---
Aluminum	ppm	ASTM D5185(m)	>25	**14**	---	---
Lead	ppm	ASTM D5185(m)	>40	**5**	---	---
Copper	ppm	ASTM D5185(m)	>330	**61**	---	---
Tin	ppm	ASTM D5185(m)	>15	**4**	---	---
Antimony	ppm	ASTM D5185(m)		**0**	---	---
Vanadium	ppm	ASTM D5185(m)		**0**	---	---
Beryllium	ppm	ASTM D5185(m)		**0**	---	---
Cadmium	ppm	ASTM D5185(m)		**0**	---	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	250	**7**	---	---
Barium	ppm	ASTM D5185(m)	10	**0**	---	---
Molybdenum	ppm	ASTM D5185(m)	100	**65**	---	---
Manganese	ppm	ASTM D5185(m)		**4**	---	---
Magnesium	ppm	ASTM D5185(m)	450	**877**	---	---
Calcium	ppm	ASTM D5185(m)	3000	**1388**	---	---
Phosphorus	ppm	ASTM D5185(m)	1150	**957**	---	---
Zinc	ppm	ASTM D5185(m)	1350	**1125**	---	---
Sulfur	ppm	ASTM D5185(m)	4250	**2071**	---	---
Lithium	ppm	ASTM D5185(m)		**<1**	---	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**15**	---	---
Sodium	ppm	ASTM D5185(m)	>75	**4**	---	---
Potassium	ppm	ASTM D5185(m)	>20	**25**	---	---
Fuel	%	ASTM D7593*	>6.0	**0.9**	---	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	**1.3**	---	---
Nitration	Abs/cm	ASTM D7624*	>20	**15.9**	---	---
Sulfation	Abs/.1mm	ASTM D7415*	>30	**30.3**	---	---

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FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	▲ **30.6**	---	---

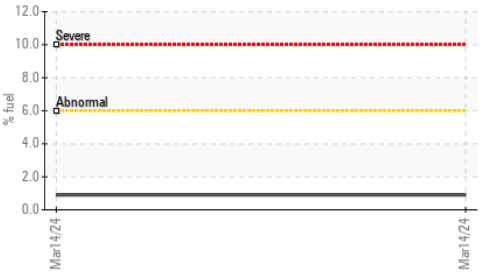
VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	**NEG**	---	---
Free Water	scalar	Visual*		**NEG**	---	---

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	10.9	**11.4**	---	---

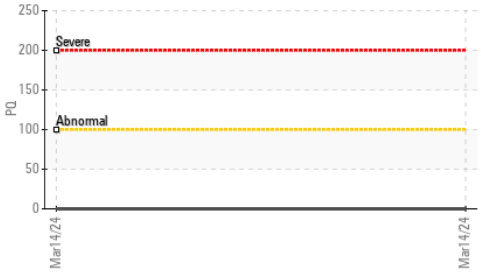
GRAPHS

▲ Ferrous Alloys

Fuel Dilution

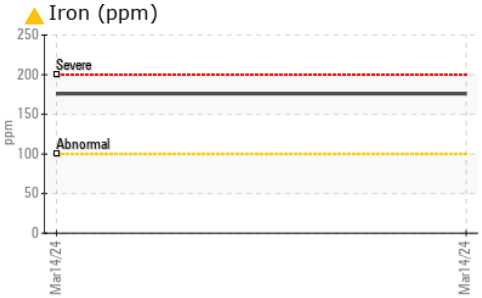


PQ

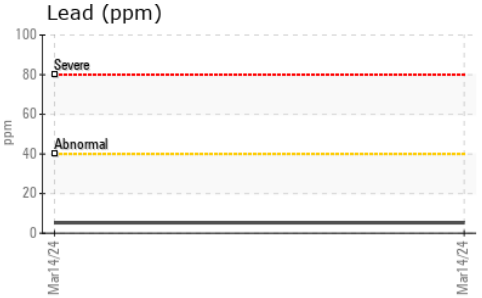


PQ

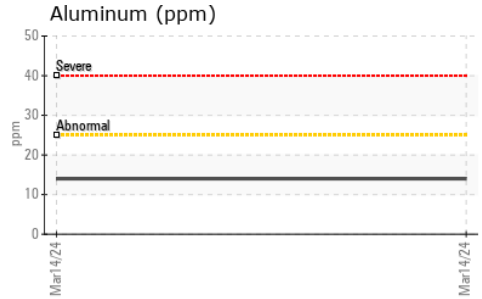
▲ Iron (ppm)



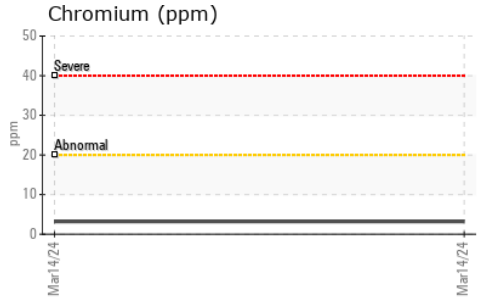
Lead (ppm)



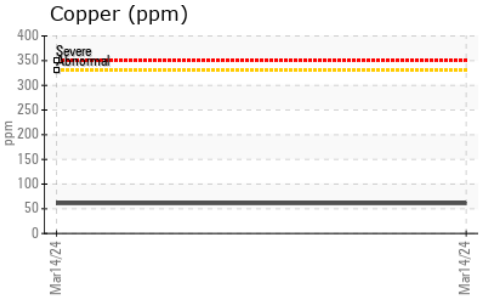
Aluminum (ppm)



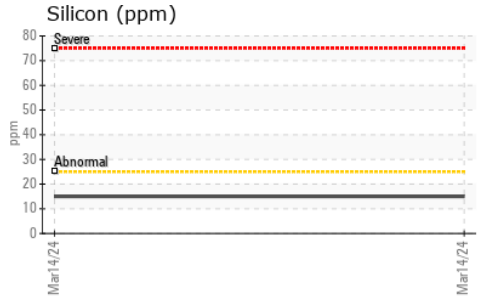
Chromium (ppm)



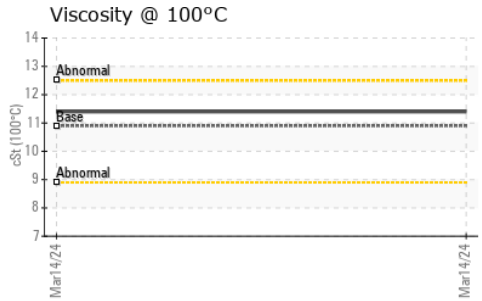
Copper (ppm)



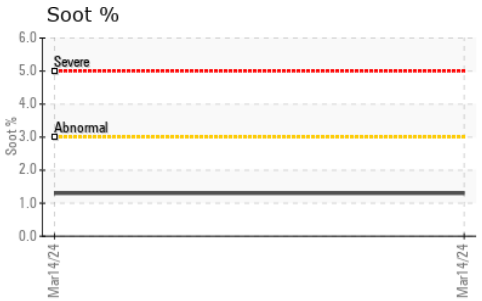
Silicon (ppm)



Viscosity @ 100°C



Soot %



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0909048
Lab Number : 02622551
Unique Number : 5747670
Test Package : MOB 1 (Additional Tests: FuelDilution, PercentFuel, PQ)

Received : 18 Mar 2024
Tested : 19 Mar 2024
Diagnosed : 19 Mar 2024 - Kevin Marson

To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.

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